UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/898,004	07/05/2001	Hideaki Harumoto	2001_0956A	1656

513	7590	11/18/2004	

WENDEROTH, LIND & PONACK, L.L.P.
2033 K STREET N. W.
SUITE 800
WASHINGTON, DC 20006-1021

EXAMINER
LIEN, TAN

ART UNIT	PAPER NUMBER
2141	

DATE MAILED: 11/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _05 July 2001_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-15_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-15_ is/are rejected.

7)☒ Claim(s) _1 and 11-15_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _05 July 2001_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☒ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _7/5/01 & 11/12/03_.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTIONS

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35

U.S.C. 119(a)-(d). The certified copy has been filed in foreign Japanese Application No.

2000-204632, filed on 07/06/2000.

Specification

The title of the invention is not descriptive. A new title is required that is clearly

indicative of the invention to which the claims are directed. The term "the same" is not

clear as to what is actually meant by the title "Streaming Method and System for

Executing the Same."

Claim Objections

Claims 1 and 11-15 are objected to because of the following informalities:

In all the independent claims, the limitation "receiving the same" seems

incomplete, and the Examiner does not know what is meant by that limitation. Is it

receiving the same packet, the same stream, or the same data? It makes no sense to

receive the same packet over and over again.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly
claiming the subject matter which the applicant regards as his invention.

Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

Claims 1-15 use terms that are introduced in the claims but do not explain in the

specifications the definition of the terms or the significant of the terms. For example,

some of these terms are "target value", "first threshold", and "second threshold." How is

the "first threshold" different from the "predetermined threshold" in claim 4 for example?

These terms are introduced but they have not references as to what they are and what

they do in the invention. They are not even explained in the specification. The

specification is basically the claims, and if the claims are unclear the Examiner has no

reference to rely on to find the meaning or significant of the terms. These terms are not

well known in the art, leaving the Examiner clueless. Therefore the Examiner will

construe the claims to their broadest reasonable interpretation.

Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite

for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention.

In claim 5, the target value increases when the detection of the transmission

capacity of the network falls short of a first threshold value and in claim 7 the target

value decreases when the detection of the transmission capacity of the network falls

short of the second threshold value, which is smaller than the first threshold value. For

the purposes of applying art, the Examiner will construe the claim to mean "the

transmission capacity of the network goes beyond a first threshold value" and applied

art accordingly.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Ravi et al (US Patent 6,292,834) in view of Chujoh et al (US Patent 6,002,802).

Claim(s) 1, 11-15: Ravi teaches a streaming method in which a server transmits stream

data to a terminal over a network, and the terminal plays back the stream data while

receiving the same said method comprising:

a target value determination step of determining, by the terminal, a target value

of the stream data to be stored in a buffer of the terminal in relation to a buffer

capacity and a transmission capacity of the network (col. 3, lines 12-25; wherein

the target value is the value that is within the bounds of the upper

INC_BW_THRESHOLD and lower DEC_BW_THRESHOLD values, and the

buffer capacity is the IDEAL_PLAYOUT_BUFFER_SIZE and the transmission

capacity is the bandwidth of the transmission line from client to server);

a step of notifying, by the terminal, the determined target value to the server (col.

3, lines 15-20; wherein the increase bandwidth message is sent to the server to

notify the rate change or rate increase); and

a control step of controlling a transmission speed based on the notified target

value when the server transmits the steam data to the terminal over the network

(FIG. 4; wherein the transmission rate is control and determined by the current

bandwidth compared to the performance variables. It will increase or decrease

transmission rate accordingly).

Ravi, however, fails to teach a delay time determination step of arbitrarily

determining a delay time from when the terminal writes head data of the stream

data to the buffer to when the terminal reads the data to start playback, by the

terminal, in a range not exceeding a value obtained by dividing the buffer

capacity by the transmission capacity.

Chujoh, in an analogous art, teaches an average delay time not exceeding the set limit_delay time. Chujoh also teaches the calculation of a value obtained by dividing the set encoding bit by the transmission rate at the frame rate of the input video signal (col. 8, lines 17-35 and col. 9, lines 23-36). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Ravi's method of determining the target value for the streaming with Chujoh's average delay time, for the advantage of efficiently encoding data suitable for picture quality and decreasing the amount of delay (col. 3, lines 18-21 Chujoh).

Claim(s) 2: Ravi and Chujoh teaches the method of claim 1, wherein in said control step,

the server controls the transmission speed so that an amount of the stream data stored in the buffer of the terminal changes in the vicinity of the target value without exceeding the target value (col. 3, lines 15-25 and FIG. 4 Ravi; wherein the transmission speed is operating within the vicinity of the Upper Increase_Bandwidth threshold (between the DEC_BW_THRESHOLD and the INC_BW_THRESHOLD values) without exceeding the Upper bound bandwidth limit, and the transmission rate will change according to the number of packets remaining in the playout buffer).

Claim(s) 3: Ravi and Chujoh teaches the method of claim 2, wherein in said control step

the server estimates and calculates the amount of the stream data stored in the

buffer of the terminal based on the transmission speed, the delay time, and a

speed of the terminal decoding the streaming data (Abstract of Ravi; The

playtime of the playout buffer is one measure of the number of packets stored in

the playout buffer based on transmission bandwidth and data streaming

decoding, factored in with Chujoh's delay timing taught in claim 1).

Claim(s) 4: Ravi and Chujoh teaches the method of claim 1, further comprising:

a detection step of detecting, by the terminal, that the transmission capacity of

the network exceeds a predetermined threshold value (col. 3, lines 20-25 Ravi;

The client must have detected a change in the playout buffer exceeding the

INC_BW_THRESHOLD predetermined value for at least a period of wait time in

order for the client to send a transmission rate change to the server);

a target value change step of changing, by the terminal, the target value based

on a result detected in said detection step (col. 3, lines 24-25 Ravi); and

a step of notifying, by the terminal, a new target value after the change to the

server (FIG. 5D Ravi; If the playtime in the playout buffer is greater than the

upper limit threshold then the performance variables change (new upper limit and

lower limit changes and therefor the target value changes according to the new

boundaries adjustment), wherein

in said control step, when receiving the new target value after the change
the server controls the transmission speed so that the amount of the
stream data stored in the buffer of the terminal changes in the vicinity of
the new target value after the change without exceeding the new target
value after the change (col. 3, lines 15-25 and FIG. 4 Ravi; wherein the
transmission speed is operating within the vicinity of the new Upper
Increase_Bandwidth threshold (between the DEC_BW_THRESHOLD and
the INC_BW_THRESHOLD values) without exceeding the new Upper
bound bandwidth limit, and the transmission rate will change according to
the number of packets remaining in the playout buffer).

Claim(s) 5: Ravi and Chujoh teaches the method of claim 4, wherein

in said detection step, when detecting the transmission capacity of the network
goes beyond a first threshold value, the terminal controls the target value to be
increased in said target value change step (col. 3, lines 20-25 Ravi; The client
must have detected a change in the playout buffer exceeding the
INC_BW_THRESHOLD value (first threshold value) for at least a period of wait
time in order for the client to send a transmission rate change to the server), and

in said control step, responding to the target value as being increased, the server
controls the transmission speed to be increased (col. 3, lines 24-25 Ravi).

Claim(s) 6: Ravi and Chujoh teaches the method of claim 5, wherein

the first threshold value is approximately a median value of an achievable

maximum transmission capacity and a transmission capacity with which a stream

data transfer loss starts occurring (Abstract and col. 9, lines 8-25 of Ravi; when

the maximum achievable capacity is reached and the playout buffer cannot

receive more than allowable (an overflow of the playout buffer occurs) then the

stream data transfer loss starts occurring in order to compute the lossrate).

Claim(s) 7: Ravi and Chujoh teaches the method of claim 4, wherein

in said detection step, when detecting that the transmission capacity of the

network as being fall short of a second threshold value which is smaller than the

first threshold value, the terminal controls the target value to be decreased in

said target value change step (col. 3, lines 15-20 Ravi; wherein the

INC_BW_THRESHOLD (first threshold value) is greater than the

DEC_BW_THRESHOLD (second threshold value), and when detecting

transmission capacity drops below the lower limit threshold the transmission rate

is decreased by sending a DEC_BW message to the server to slow the rate

down), and

in said control step, responding to the target value as being decreased, the

server controls the transmission speed to be decreased (col. 3, lines 18-19 Ravi).

Claim(s) 8: Ravi and Chujoh teaches the method of claim 7, wherein

the second threshold value is a value corresponding to the transmission capacity

with which the stream data transfer loss starts occurring (Abstract and col. 9,

lines 8-25 of Ravi; when the second threshold value is reached and the playout

buffer cannot receive enough packets to the playout buffer (an underflow of the

playout buffer occurs) then the stream data transfer loss starts occurring in order

to compute the lossrate).

Claim(s) 9: Ravi and Chujoh teaches the method of claim 8, wherein

when the terminal controls the target value to be decreased in said target value

change step, in said control step, the server controls the transmission speed to

be decreased by comparing a presentation time of every frame structuring the

stream data to be transmitted with a current time, and skipping transmitting any

frame whose presentation time is older than the current time (col. 12, lines 58-61

Ravi; wherein the P frame is sequentially time-wise before the I frame, and the P

frame will be skipped to the next I frame in the buffer. When the P frames are

skipped, the transmission rate can be decreased).

Claim(s) 10: Ravi and Chujoh teaches the method of claim 8, wherein

when the terminal controls the target value to be decreased in said target value

change step (col. 3, lines 15-20 Ravi), in said control step, the server

compares a priority level of every frame structuring the stream data to be

transmitted with a reference value (col. 12, lines 30-35 Ravi; wherein the base

(lowest) resolution frames are given the highest priority for rendering the video and the frames used for improving the base resolution are given a lower priority), skips transmitting every frame whose priority level is lower than the reference value (col. 12, lines 30-35 Ravi; If priority is assigned according to resolution then the low priority high resolution frames can be skipped and still be able to render video images. If there is no priority assigned to the frames then every frame will be rendered and no frames will be skipped, but since priority is assigned to them some of the high resolution frames can be skipped to compensate for the decrease in transmission rate), and

for any frame whose priority level is higher than the reference value, compares every presentation time with the current time, and skips transmitting any frame whose presentation time is older than the current time (col. 12, lines 58-61 Ravi; wherein the P frame is sequentially time-wise before the I frame, and the P frame will be skipped to the next I frame in the buffer. When the P frames are skipped, the transmission rate can be decreased).
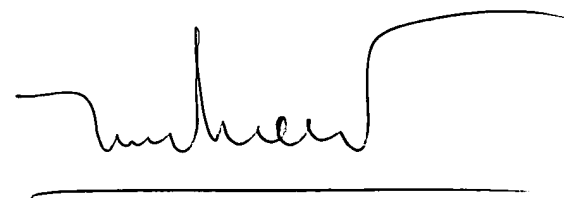
Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Tan Lien whose telephone number is (571) 272-3883. The examiner can normally be reached on Monday-Thursday from 8:30am to 6pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia, can be reached at (571) 272-3880. The fax phone number for this Group is (703) 305-3718.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [tan.lien@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

LE HIEN LUU
PRIMARY EXAMINER